# ABSTRACT


## The Levels of Zinc, Cuprum And Selenium In Normotensive And Primary Hypertension Patients

One of the causes of primary hypertension is an exposure to free radicals. The formation of free radicals in the body can be prevented by taking antioxidants. The role of trace element such as zinc, cuprum and selenium is as a catalyst of antioxidant enzyme that are naturally present in the body. The objective of this study was to analyze the different of levels of zinc, cuprum and selenium in both normotensive and primary hypertension patients. This study was an analytical observational with cross sectional design. Samples were 15 primary hypertension patients and 15 normal individuals as a comparison group, aged between 40-70 years old, who visited Haji Hospital Surabaya. Samples were divided randomly. The data was collected through interviews, 2x24 hour food recall and examination of blood samples. Serum concentrations of Zinc, Cuprum and Selenium were measured by using AAS (Atomic Absorption Spectrophotometer) method. The data were analyzed by t-test independent test. The result of the study showed that the average levels of zinc, cuprum and selenium in hypertension patients were lower than the normotensive patients. However, statistically there was no difference found between the two groups regarding serum zinc levels (p=0.852) and there was a significant difference between the two groups regarding serum cuprum levels ( p=0.022) and serum selenium levels (p=0.014). The conclusion is there are different of levels of cuprum and selenium serum between the two groups but not with the levels of zinc.


*Keywords : Trace Element, Primary Hypertension*